In the Specification

Please replace the paragraph beginning on page 3 line 24 with the following amended and marked-up paragraph:

In some embodiments, the environment comprises factors that direct differentiation of hematopoietic progenitor cells to produce differentiated cells of non-hematopoietic lineage selected from the group consisting of mesenchymal, parenchymal, neuronal, endothelial, and epithelial cells. In a certain embodiment, the hematopoietic progenitor cells are $CD34^-$ cells, and the environment comprises growth factors selected from the group consisting of bFGF and TGF-β, to produce mesenchymal cells. In a further embodiment, the hematopoietic progenitor cells are $CD34^+$ and/or $CD34^-$ cells, and the environment comprises growth factors selected from the group consisting of putrescine, progesterone, sodium selenite, insulin, transferrin, EGF, NGF, and bFGF, to produce neuronal ~~eels~~ cells. In a yet further embodiment, the hematopoietic progenitor cells are $CD34^+$ and/or $CD34^-$, and the environment comprises growth factors selected from the group consisting of IL-3, SCF, TGF-β1, and Flk-2/Flt-3 ligand, to produce epithelial cells. In a yet further embodiment, the hematopoietic progenitor cells are $CD34^+$ and/or $CD34^-$, and the environment comprises VEGF, to produce endothelial cells. In a still further embodiment the hematopoietic progenitor cells are $CD34^+$ and/or $CD34^-$, and the environment comprises EGF, bFGF, and SF/HGF, to produce parenchymal cells.

Please replace the paragraph beginning on page 28 line 19 with the following amended and marked-up paragraph:

Normal human bone marrow cells or light density mononuclear cells were purchased from Poietic Technologies (Gaithersburg, MD). In case of whole bone marrow cells mononuclear cells were isolated by diluting the samples 1:3 with RPMI-1640 media followed by Ficoll-[[hispaque]] Hypaque density (1.077 mg/cm^3) centrifugation separation (Sigma). Light density mononuclear cells were resuspended in phosphate-buffered saline (PBS) without Ca^+, Mg^+ supplemented with 2% FBS and incubated at room temperature for 15 minutes with a mixture of CD2, CD3, CD11b, CD14, CD15, CD16, CD19 CD24, CD33, CD41, CD56, CD66b, and Glycophorin-A tetrameric antibody complexes (StemCell Technologies, Vancouver, British Columbia, Canada). These tetrameric complexes are bispecific cross-linkers that bind that described antigen and dextran. After washing excess antibodies, 20 nm magnetic colloidal

iron/dextran particles were added and incubated at room temperature for 15 minutes. Cells ~~wre~~ were then eluted through a magnetic column to enrich for cells not expressing lineage markers (Lin^-) according to the ~~manufacture's~~ manufacturer's instructions (STEMSEP™, StemCell Technologies). Lineage depleted cells were subjected to a standard CD34 immunomagnetic bead separation using the miniMACS system following the ~~manufactuerer's~~ manufacturer's guidelines (Miltenyi Biotech, Auburn, CA). Both $CD34^+Lin^-$ and $CD34^-Lin^-$ population of cells were collected.